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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/674,569	09/29/2003	Karthik Janakiraman	A6378C1/T45510	3855

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Applied Materials, Inc.
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Santa Clara, CA 95052

EXAMINER

ZERVIGON, RUDY

ART UNIT	PAPER NUMBER
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1763

DATE MAILED: 07/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/674,569

Applicant(s)

JANAKIRAMAN ET AL.

Examiner

Rudy Zervigon

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 January 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) 6-18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 1/27/2005.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-5, drawn to a gas distribution face plate, classified in class 118, subclass 715.
 - II. Claims 6-18, drawn to a method of depositing on a semiconductor wafer, classified in class 427, subclass 248.1.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case, the apparatus as claimed can be used to practice another and materially different process, for example, and etching process
3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.
4. During a telephone conversation with Kent J. Tobin on April 22, 2005 a provisional election was made without traverse to prosecute the invention of Group I, claims 1-5. Affirmation of this election must be made by applicant in replying to this Office action. Claims 6- are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

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5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Information Disclosure Statement

6. The information disclosure statement filed January 27, 2005 fails to comply with 37 CFR 1.98(a)(1), which requires the following: (1) a list of all patents, publications, applications, or other information submitted for consideration by the Office; (2) U.S. patents and U.S. patent application publications listed in a section separately from citations of other documents; (3) the application number of the application in which the information disclosure statement is being submitted on each page of the list; (4) a column that provides a blank space next to each document to be considered, for the examiner's initials; and (5) a heading that clearly indicates that the list is an information disclosure statement. The information disclosure statement has been placed in the application file, but the information to the references of "2002/192370" and "2004/060514" referred to therein has not been considered.

Double Patenting

7. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground

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provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-5 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-17 of copending Application No. 10/429,022. Although the conflicting claims are not identical, they are not patentably distinct from each other because the pending claims in this application require a dimensional limitation of the inlet orifices. Application No. 10/429,022 also has inlet orifices (336a; Figure 3B, 4A) without the claimed dimensional requirements of the pending claims of this application. It would have been obvious to one of ordinary skill in the art at the time the invention was claimed to optimize the dimension of inlet orifices (336a; Figure 3B, 4A) of Application No. 10/429,022. Motivation to optimize the dimension of inlet orifices (336a; Figure 3B, 4A) of Application No. 10/429,022 is for ensuring process gas flow uniformity as taught by Application No. 10/429,022 (section [0040]). Further, it is well established that changes in apparatus dimensions are within the level of ordinary skill in the art. (*Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984); *In re Rose*, 220 F.2d 459, 105 USPQ 237 (CCPA 1955); *In re Rinehart*, 531 F.2d 1048, 189 USPQ 143 (CCPA 1976); See MPEP 2144.04).

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

8. Claims 1-5 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims of copending Application

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No. 10/412,446. Although the conflicting claims 11- 21 are not identical, they are not patentably distinct from each other because the pending claims in this application require a dimensional limitation of the inlet orifices. Application No. 10/412,446 also has inlet orifices (336a; Figure 3B, 4A) without the claimed dimensional requirements of the pending claims of this application. It would have been obvious to one of ordinary skill in the art at the time the invention was claimed to optimize the dimension of inlet orifices (13b; Figure 1D) of Application No. 10/412,446. Motivation to optimize the dimension of inlet orifices (13b; Figure 1D) of Application No. 10/412,446 is for ensuring process gas flow uniformity as taught by Application No. 10/412,446 (section [0031]). Further, is well established that changes in apparatus dimensions are within the level of ordinary skill in the art.(Gardner v. TEC Systems, Inc. , 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied , 469 U.S. 830, 225 USPQ 232 (1984); In re Rose , 220 F.2d 459, 105 USPQ 237 (CCPA 1955); In re Rinehart, 531 F.2d 1048, 189 USPQ 143 (CCPA 1976); See MPEP 2144.04).

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

9. Claims 1-5 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-18, 28, and 29 of copending Application No. 10/057,280. Although the conflicting claims are not identical, they are not patentably distinct from each other because the pending claims in this application require a dimensional limitation of the inlet orifices. Application No. 10/057,280 also has inlet orifices (318; Figure 4A) without the claimed dimensional requirements of the pending claims of this application. It would have been obvious to one of ordinary skill in the art at the time the

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invention was claimed to optimize the dimension of inlet orifices (318; Figure 4A) of Application No. 10/057,280. Motivation to optimize the dimension of inlet orifices (318; Figure 4A) of Application No. 10/057,280 is for ensuring process gas flow uniformity as taught by Application No. 10/057,280 (section [0072]). Further, is well established that changes in apparatus dimensions are within the level of ordinary skill in the art. (Gardner v. TEC Systems, Inc. , 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied , 469 U.S. 830, 225 USPQ 232 (1984); In re Rose , 220 F.2d 459, 105 USPQ 237 (CCPA 1955); In re Rinehart, 531 F.2d 1048, 189 USPQ 143 (CCPA 1976); See MPEP 2144.04).

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

10. Claims 1-5 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-17 of U.S. Patent No. 6,830,624. Although the conflicting claims are not identical, they are not patentably distinct from each other because the pending claims in this application require a dimensional limitation of the inlet orifices. U.S. Patent No. 6,830,624 also has inlet orifices (336a; Figure 3B, 4A) without the claimed dimensional requirements of the pending claims of this application. It would have been obvious to one of ordinary skill in the art at the time the invention was claimed to optimize the dimension of inlet orifices (336a; Figure 3B, 4A) of U.S. Patent No. 6,830,624. Motivation to optimize the dimension of inlet orifices (336a; Figure 3B, 4A) of U.S. Patent No. 6,830,624 is for ensuring process gas flow uniformity as taught by U.S. Patent No. 6,830,624 (column 8; lines 36-56). Further, is well established that changes in apparatus dimensions are within the level of ordinary skill in the art. (Gardner v. TEC Systems, Inc. , 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984),

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cert. denied , 469 U.S. 830, 225 USPQ 232 (1984); In re Rose , 220 F.2d 459, 105 USPQ 237 (CCPA 1955); In re Rinehart, 531 F.2d 1048, 189 USPQ 143 (CCPA 1976); See MPEP 2144.04).

11. Claims 1-5 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-8 of U.S. Patent No. 6,793,733. Although the conflicting claims are not identical, they are not patentably distinct from each other because the pending claims in this application require a dimensional limitation of the inlet orifices. U.S. Patent No. 6,793,733 also has inlet orifices (318; Figure 4A) without the claimed dimensional requirements of the pending claims of this application. It would have been obvious to one of ordinary skill in the art at the time the invention was claimed to optimize the dimension of inlet orifices (318; Figure 4A) of U.S. Patent No. 6,793,733. Motivation to optimize the dimension of inlet orifices (318; Figure 4A) of U.S. Patent No. 6,793,733 is for ensuring process gas flow uniformity as taught by U.S. Patent No. 6,793,733 (column 8; lines 13-18). Further, it is well established that changes in apparatus dimensions are within the level of ordinary skill in the art. (Gardner v. TEC Systems, Inc. , 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied , 469 U.S. 830, 225 USPQ 232 (1984); In re Rose , 220 F.2d 459, 105 USPQ 237 (CCPA 1955); In re Rinehart, 531 F.2d 1048, 189 USPQ 143 (CCPA 1976); See MPEP 2144.04).

Claim Rejections - 35 USC § 102/103

12. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this

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subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. Claim 1 is rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Metzner; Craig R. et al (US 6,454,860 B2).

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). For applications filed on or after November 29, 1999, this rejection might also be overcome by showing that the subject matter of the reference and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person. See MPEP § 706.02(I)(1) and § 706.02(I)(2).

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Metzner teaches a gas distribution face plate (240; Figure 4; column 7, lines 33-50) comprising: a face plate (240; Figure 4; column 7, lines 33-50) body having a thickness (distance 249; Figure 7) defining a number of inlet orifices (249; Figure 7; column 9, lines 53-64) having a width (247; Figure 7; column 9, lines 53-64) and a depth (283, 249; Figure 7; column 9, lines 53-64), at least one of the number, the width (247; Figure 7; column 9, lines 53-64), and the depth (283, 249; Figure 7; column 9, lines 53-64) configured to create a uniform pressure drop of between about 0.8 and 1 Torr across edge and center regions of the face plate (240; Figure 4; column 7, lines 33-50) as gas is flowed through the inlet orifices (249; Figure 7; column 9, lines 53-64), whereby a thickness of material deposited at an edge of a wafer varies by 3% or less from a thickness of material deposited at a center of the wafer, when the wafer is separated from the face plate (240; Figure 4; column 7, lines 33-50) by a gap of between about 75 and 450 mils, as claimed by claim 1. Applicant's claim limitations of "...configured to create a uniform pressure drop of between about 0.8 and 1 Torr across edge and center regions of the face plate (240; Figure 4; column 7, lines 33-50) as gas is flowed through the inlet orifices, whereby a thickness of material deposited at an edge of a wafer varies by 3% or less from a thickness of material deposited at a center of the wafer, when the wafer is separated from the face plate by a gap of between about 75 and 450 mils" are claim requirements of intended use. Further, it has been held that claim language that simply specifies an intended use or field of use for the invention generally will not limit the scope of a claim (Walter , 618 F.2d at 769, 205 USPQ at 409; MPEP 2106). Additionally, in apparatus claims, intended use must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim (In

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re Casey, 152 USPQ 235 (CCPA 1967); In re Otto, 136 USPQ 458, 459 (CCPA 1963); MPEP 2111.02).

In the event that claim 1 is not deemed to anticipate the pending claims, the Examiner cites that Metzner is silent with respect to the claimed intended use requirements the Examiner identifies above. As a result:

It would have been obvious to one of ordinary skill in the art at the time the invention was made to optimize the dimensions of Metzner's inlet orifices (249; Figure 7; column 9, lines 53-64) to achieve the claimed film thickness variation resulting from the uniform pressure gradient.

Motivation to optimize the dimensions of Metzner's inlet orifices (249; Figure 7; column 9, lines 53-64) to achieve the claimed film thickness variation resulting from the uniform pressure gradient is for achieving film thickness uniformity as taught by Metzner (column 15, lines 7-15). Further, it is well established that changes in apparatus dimensions are within the level of ordinary skill in the art. (Gardner v. TEC Systems, Inc., 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984); In re Rose, 220 F.2d 459, 105 USPQ 237 (CCPA 1955); In re Rinehart, 531 F.2d 1048, 189 USPQ 143 (CCPA 1976); See MPEP 2144.04)

15. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Metzner; Craig R. et al (US 6,454,860 B2). The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a

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showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). For applications filed on or after November 29, 1999, this rejection might also be overcome by showing that the subject matter of the reference and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person. See MPEP § 706.02(l)(1) and § 706.02(l)(2).

Metzner is discussed above. Metzner teaches Metzner's face plate (240; Figure 4; column 7, lines 33-50) of claim 1 wherein Metzner's orifice (249; Figure 7; column 9, lines 53-64) width (247; Figure 7; column 9, lines 53-64) comprises a distance of 0.028" (column 10, line 10), and is not between about 0.010" and 0.018", as claimed by claim 2.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to optimize the width of Metzner's inlet orifices (249; Figure 7; column 9, lines 53-64) to between about 0.010" and 0.018" is to achieve the claimed film thickness variation resulting from the uniform pressure gradient.

Motivation to optimize the width of Metzner's inlet orifices (249; Figure 7; column 9, lines 53-64) to between about 0.010" and 0.018" is to achieve the claimed film thickness variation resulting from the uniform pressure gradient is for achieving film thickness uniformity as taught by Metzner (column 15, lines 7-15). Further, it is well established that changes in apparatus

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dimensions are within the level of ordinary skill in the art.(Gardner v. TEC Systems, Inc. , 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied , 469 U.S. 830, 225 USPQ 232 (1984); In re Rose , 220 F.2d 459, 105 USPQ 237 (CCPA 1955); In re Rinehart, 531 F.2d 1048, 189 USPQ 143 (CCPA 1976); See MPEP 2144.04)

16. Claim 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Metzner; Craig R. et al (US 6,454,860 B2) in view of Umotoy; Salvador et al. (US 6,079,356 A).

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). For applications filed on or after November 29, 1999, this rejection might also be overcome by showing that the subject matter of the reference and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person. See MPEP § 706.02(l)(1) and § 706.02(l)(2).

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Metzner is discussed above. Metzner does not teach Metzner's face plate (240; Figure 4; column 7, lines 33-50) of claim 1 wherein the number comprises between about 2000 and 17500 orifices (249; Figure 7; column 9, lines 53-64), as claimed by claim 3. Metzner does not teach Metzner's face plate (240; Figure 4; column 7, lines 33-50) of claim 3 wherein the number comprises about 10000 and the face plate (240; Figure 4; column 7, lines 33-50) is configured to process a wafer having a diameter of about 300 mm, as claimed by claim 4 because Metzner teaches only processing 200mm substrates (column 6, lines 13-25). Metzner does not teach Metzner's face plate (240; Figure 4; column 7, lines 33-50) of claim 3 wherein the number comprises about 5000 and – claim 5.

Umotoy teaches a deposition chamber showerhead (120; Figure 5; column 7, line 64 – column , line 30) with optimized orifices distribution and numbers.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to optimize the number of Metzner's inlet orifices (249; Figure 7; column 9, lines 53-64) as taught by Umotoy, and to increase the size of Umotoy's processing chamber to accommodate larger sized wafers.

Motivation to optimize the number of Metzner's inlet orifices (249; Figure 7; column 9, lines 53-64) as taught by Umotoy, and to increase the size of Umotoy's processing chamber to accommodate larger sized wafers is for achieving uniform depositions as taught by Umotoy (column 4; lines 63-67), and to increase product production (integrated circuits). Further, it is well established that the duplication of parts is obvious (In re Harza , 274 F.2d 669, 124 USPQ 378 (CCPA 1960) MPEP 2144.04).

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Conclusion

17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

US 20040216844 A1

US 20040200499 A1

US 20030209323 A1

US 20030140851 A1

US 6830624 B2

US 6793733 B2

US 6444039 B1

US 6436193 B1

US 6106663 A

US 6024799 A

US 5812403 A

US 5728223 A

US 5567267 A

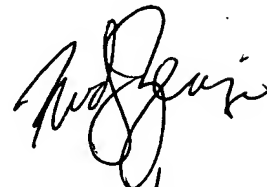
US 5264040 A

US 4989541 A

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Rudy Zervigon whose telephone number is (571) 272.1442. The examiner can normally be reached on a Monday through Thursday schedule from 8am through 7pm. The official fax phone number for the 1763 art unit is (703) 872-9306. Any

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Inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Chemical and Materials Engineering art unit receptionist at (571) 272-1700. If the examiner can not be reached please contact the examiner's supervisor, Parviz Hassanzadeh, at (571) 272-1435.


7/25/5